**Mr Bura Shamba: Adopter and Adapter**

**Introduction:** Bura Shamba Aitoois a small scale farmer aged 54 years married with a total of seven (7) children ( six boys and one girl) living at Hallu village (Latitude 04˚18.301', Longitude 035˚53.445', Altitude – 1180 meters above sea level), Galapo ward Babati district.

**The Challenge:** Before joining Africa RISING program activities in 2014, he used to plant non-improved or more than 4-5 years’ re-cycled maize and pigeonpea seeds on his 5-acre plot. He didn’t plant in recommended spacing, and neither did he apply any mineral fertilizer besides low quantities of farm yard manure which was also not properly stored. Due to those unimproved practices, he used to obtain poor/low maize yields ranging from 4-5 bags per acre, whereas the pigeonpea yields were 2-3 bags per acre, thus leading to poor living conditions.

**Solution:** In 2014, he heard about the maize-pigeonpea intercropping technology being tested by the Africa RISING program. The technology consisted of intercropping improved maize and pigeopea pea seed at an inter row spacing of 100 cm and 50cm in between rows using 20 kgs P/ha at planting, from different sources of Phosphorus fertilizers. The different sources of P fertilizers were Di-Ammonium Phosphate (DAP), Minjingu Mazao and Minjingu Hyperphosphate (granular).

When he used the technology he obtained average maize yields ranging from 5-6t/ha, and pigeonpea from 1-2t/ha depending on the weather conditions.

Mr Bura, his wife and two children standing in front of a maize-pigeonpea intercropping plot with 20kgs P/ha applied at planting

Using average price of 380/= per kg of maize, and 1,200/= per kg for pigeonpea for the 3 years, the average incomes per ha obtained by Mr Bura are shown in Table 1.

Table 1: Incomes obtained by Mr Bura before and after adoption of maize-pigeonpea intercropping using P-fertilizers at planting

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| --- | --- | --- |
| **Crop** | **Yields before Africa RISING (AR)** | **Average yields after adoption of AR technologies** |
| Maize | 1.2 t/ha | 5-6 t/ha |
| Pigeonpea | 0.2 | 1-2t/ha |
| Income per ha from both crops | 774,591 (USD 387.30) | 4,045,600.00(USD 2,022.80) |

**Impact of adopting the technology:**

1. Educated his children
2. Bought a motor-bike
3. Dug a water bore-hole

Mr Bura, his wife and some of their children standing in front of the new motor bike they bought using incomes obtained from adoption of the maize pigeonpea intercropping using P fertilizer at planting.



**Adaptation:** In 2017, MrBura started to do his own experiments by checking whether there would be any difference in yields if he intercropped maize pigeonpea with a modified spacing of 80cm x 25 cm with one plant per hill. He planted an area of 20mx50m without fertilizer on the south western part of his farm, and a similar area with Minjingu Mazao fertilizer on the eastern side/part of his farm using the modified spacing. He says that there were no big differences in the yields of both maize and pigeonpea, which he attributed to the residual effects of the fertilizers he had applied in the previous years. This season he planted sole crops of SC 627 and Lubango maize varieties at spacings of 80cmx 25cm and 75cm x 25cm respectively, with one plant per hill on the northern side of his farm. The inter-row spacing for SC 627 was bigger because of its bigger stature. He applied Di-Ammonium Phosphate (DAP) fertilizer at the recommended rate of 20kgs P/ha to both monocrops. He also intercropped the Lubango maize variety with pigeonpea at a spacing of 80cmx 25cm, and used DAP at the recommended rate of 20kgsP/ha also. The Lubango maize variety was not introduced to the farmer by Africa RISING (AR) but, through his own search for new improved technologies after seeing the benefits from the AR technologies.

His wife started to use the bore-hole water for growing tomato, spinach and African Nightshade in August 2017. She planted the vegetables on ridges/beds, and each vegetable had six (6) ridges. The tomato ridges differed in size from 3mx 5m to 6mx 9m; whereas all the ridges for the spinach and African Nightshade were 1mx6m in size. She used farm yard manure in the vegetable production, and obtained 300,000/= from the sales of the tomatoes, whereas the sales of both spinach and African Nightshade earned her about 130,000/=. She rotated the tomato ridges by planting green maize in December 2017. The spinach and African Nightshade ridges were also planted with green maize in January 2018.